

Department of Conservation Division of Land Resource Protection



FROM INTEGRATED WATER
MANAGEMENT TO
INTEGRATED NATURAL
RESOURCE MANAGEMENT

TERMINOLOGY

- The Watershed= Place = interaction between components of the ecosystem
- Ecosystem Services= Management Goals and Objectives
- Management Approach
 - Recognizes importance of local and regional management
 - Organized based on physical, chemical, and biological boundaries and the human patterns within them

Hydrology

Precipitation, flow

Basic Elements

Biology

Flora, fauna, ecosystems

*Each must be
considered in context
with the others*

Geology

*Landforms, soils,
topography*

Social

Culture, economics, safety

California's Working Lands

Ecosystem Services

- ✓ purification of air and water
- ✓ mitigation of floods and droughts
- ✓ detoxification and decomposition of wastes
- ✓ soil and soil fertility generation and renewal
- ✓ pollination of crops and natural vegetation
- ✓ control of agricultural pests
- ✓ dispersal of seeds and cycling of nutrients

Ecosystem Services



Managing California's Working Lands

Ecosystem Services

- ✓ maintenance of biodiversity
- ✓ protection from ultraviolet rays
- ✓ stabilization of climate
- ✓ moderation of temperature extremes
- ✓ moderation of the force of floods, winds and waves
- ✓ support of diverse human cultures
- ✓ beauty and spiritual sustenance

Ecosystem Services



Managing California's Working Lands

Ecosystem Services

- Many ecosystem services are beyond price - providing a source of *cultural identity*, of *kinship with life*, of *learning*, of *evolutionary processes*, and with the primary components of *soil, air, water, and biodiversity* make up complex systems which as yet, have no engineering substitutes.

Ecosystem Services



Managing California's Working Lands

RESILIENCE AND CHANGE

- Systems need to be both robust and resilient to provide long term support services for human and other populations
- Change is inevitable (and necessary)
- Reactions to change are usually more important and influential than the change itself

Functional Continuity

- System complexity allows a greater range of adaptation options
- Robust range of options provides greater resilience in the face of change
- Resilience provides the opportunity for more effective adaptation
- Effective adaptation retains complexity and sustains functions

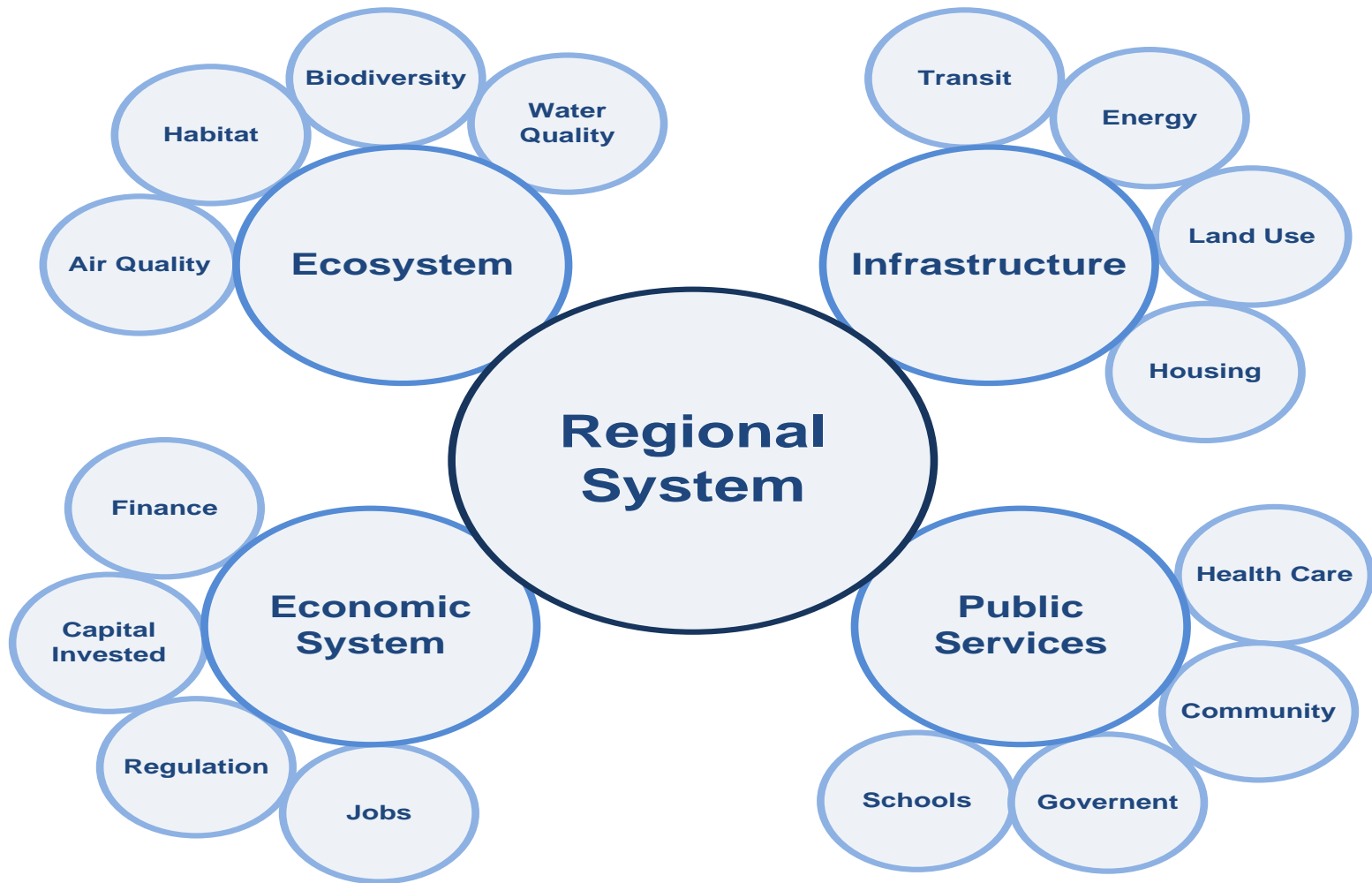
Integrated Natural Resource Management

- ***Public Involvement***
- ***Inclusiveness***
- ***Multi- objective approach***
- ***Transparency***
- ***Goal- oriented***
- ***Scientifically valid***
- ***Performance based***
- ***Integrate relevant federal, state, tribal, regional and local goals***

Integrated Natural Resource Management

- Integration of management effort will become more commonly used
 - As change occurs
 - In increments over time
 - As traditional methods fail to achieve anticipated results

Regional Planning & Management



Used with permission- from unpublished manuscript- Jordan
Henk PhD, Redlands University *Managing California's Working Lands*

Learn where your water comes from...



Managing California's Working Lands